

Clmpto
11092005
PY



1. An electroluminescent display device, comprising:

a rear substrate comprising a first electrode layer, a light-emitting layer and a second electrode layer that are orderly formed on an upper surface of the rear substrate;
a front substrate, that is coupled with the rear substrate, the front substrate comprising a patterned conductive black matrix layer formed on a lower surface of the front substrate, the patterned black matrix layer facing the second electrode layer on the rear substrate; and
a plurality of conductive connecting members disposed between the second electrode layer and the black matrix layer, the conductive connecting members electrically connecting the second electrode layer to the patterned black matrix layer.

2. The electroluminescent display device of claim 1, the connecting members being conductive spacers disposed between the second electrode layer and the patterned black matrix layer.

3. The electroluminescent display device of claim 2, an interior portion of the conductive spacers being a polymer particle, the outer surface of the conductive spacers being coated with a metal.

4. The electroluminescent display device of claim 1, the connecting members being protrusions protruding from the black matrix layer.

5. The electroluminescent display device of claim 1, the connecting members being made of a material selected from the group consisting of Ni, Al, Ag, Au, Cu, and an alloy thereof.

6. The electroluminescent display device of claim 1, further comprising a transparent filler material between adjoining connecting members, the transparent filler material being disposed between the second electrode layer and the black matrix layer, the transparent filler material being rigid and stable enough to prevent the connecting members from moving.

7. The electroluminescent display device of claim 1, the connecting members having a height of 2 to 30 μm .

8. The electroluminescent display device of claim 1, further comprising a color filter layer, the color filter layer being formed on a same level as the patterned black matrix layer.

9. The electroluminescent display device of claim 1, the black matrix layer being electrically connected to the second electrode layer without significant voltage drop.

10. The electroluminescent display device of claim 3, the metal portion of the connecting members being made of a material selected from the group consisting of Ni, Al, Ag, Au, Cu, and an alloy thereof.



11. The electroluminescent display device of claim 1, the light-emitting layer being organic.
12. The electroluminescent display device of claim 1, the light-emitting layer being inorganic.
13. An electroluminescent display device, comprising:
a rear substrate comprising thin film transistor, a first electrode layer driven by the thin film transistor, a light-emitting layer formed on the first electrode layer and a second electrode layer formed on the light-emitting layer;
a front substrate that is coupled to the rear substrate, the front substrate comprising a patterned conductive black matrix layer that is formed on a lower surface of the front substrate and that faces the second electrode layer of the rear substrate coupled to the front substrate; and
a plurality of conductive connecting members disposed between the second electrode layer and the patterned black matrix layer, the plurality of conductive connecting members electrically connecting the second electrode layer to the patterned black matrix layer.
14. The electroluminescent display device of claim 13, the connecting members being conductive spacers disposed between the second electrode layer and the patterned black matrix layer.

15. The electroluminescent display device of claim 14, the conductive spacers being made of a polymer particle, the outer surface of the conductive spacers being made of a conductive metal.

16. The electroluminescent display device of claim 13, the connecting members being protrusions protruding from the patterned black matrix layer.

17. The electroluminescent display device of claim 13, the connecting members being made of a material selected from the group consisting of Ni, Al, Ag, Au, Cu, and an alloy thereof.

18. The electroluminescent display device of claim 13, further comprising a transparent filler material between adjoining connecting members, the transparent filler material being disposed between the second electrode layer and the black matrix layer, the transparent filler material being rigid and stable enough to prevent the connecting members from moving.

19. The electroluminescent display device of claim 13, the connecting members having a height of 2 to 30 μm .

20. The electroluminescent display device of claim 10, further comprising a color filter layer, the color filter layer being formed on a same level as the patterned black matrix layer.

PATENT
PS6589

21. The electroluminescent display device of claim 10, wherein the black matrix layer being electrically connected to the second electrode layer without significant voltage drop.